DISCUSSION ON CRANIOTOMY.

I. Is Craniotomy Justifiable on Living Children?

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The question, "Is craniotomy justifiable upon the living child?" is one of the most important presented to the obstetrician. It involves the decision of the question whether we have, under any of the circumstances of practice, a right to destroy a human life.

With the legal or theological aspects of the question I will not concern myself, although I believe that neither jurist nor theologian will assume to decide contrary to the opinion of the experienced and conscientious obstetrician.

I do not hesitate to answer the question in the affirmative. In doing so I may, however, be permitted to state my reasons for so answering, and to point out the circumstances and conditions under which, in my opinion, craniotomy *is* justifiable upon the living child.

Statistics, which are so often quoted as conclusive in determining the proper line of action in this as in other surgical problems, may usually be made to support the most diverse claims. Without wishing to brand all statistics as false or valueless, I must confess that in this particular field they are more likely to lead to false than to true conclusions. If, for example, we compare the older mortality records of craniotomy (fatal in more than 20 per cent. of the mothers) with the most recent records of the improved Cesarean section in Germany (fatal to 10.6 per cent. of the mothers operated upon), or even take the record of a single operator, as Zweifel, who has done eleven Cesarean sections without loss of a single mother or child, we shall be compelled to reject craniotomy in all cases and banish it from the list of obstetric operations. But if, on the contrary, we compare the recent records of craniotomy (mortality of mothers about 5 per cent) with the latest statistics of the modified

Cesarean operation in the United States (maternal mortality 78 per cent.), we are forced to the conclusion that the destructive operation is the more conservative one. Neither of these methods of comparison is fair, however, and conclusions drawn from such statistics are false and untrustworthy.

Most obstetricians of experience are unwilling to displace craniotomy entirely by the Cesarean section—the *only* operation that can enter into consideration in most of the cases where the first-named operation is applicable.

If the obstetrician were always consulted in time, so that he could give the case, in all its bearings, careful consideration before labor begins, he would doubtless often decide upon a different course of action from that which he is subsequently forced to adopt. In practice, the consulting obstetrician is rarely called until something has occurred to obstruct the natural progress of labor, and then he is forced to do that which his judgment approves as best for his patient and her domestic relations. To be compelled to decide promptly, as often happens, between the destruction of a living child by craniotomy, or the performance of what is still rightly looked upon as the superlative operation in surgery, is not an alternative to be lightly considered.

The *circumstances* surrounding each case—as the dictionary has it, "the matters attending an action that modify it for better or worse"—must be taken into account before coming to a decision. The condition of the patient, the duration of labor, character of previous labors, degree of obstruction which the operation is intended to relieve, the prospective viability of the child—all these circumstances, and more, demand careful consideration before the character of the operation is decided upon. If the patient is worn out by the length or severity of her travail; if fever or other signs of septic absorption are present; if she has previously given birth to living children; or if the physical signs point to an early death of the fetus even if promptly delivered, Cesarean section is not an operation of election, and craniotomy is the only procedure rationally indicated. Of course, I assume that no physician with any obstetrical experience would proceed to craniotomy without first trying to effect delivery with the forceps. With this instrument delivery can often be effected in cases where the pelvic canal is much narrower than that generally considered necessary for the passage of an unmutilated child. The cases where podalic version can achieve delivery after the forceps properly used have failed,

are, in my opinion, too few to justify resort to a procedure which greatly increases the danger to both mother and child, and unduly complicates, if not successful, the perforation that afterward becomes necessary.

It is impossible to lay down hard-and-fast rules to guide us in an operation where the individual judgment must make the decision; but in a general way it may be stated that a pelvic contraction antero-posteriorly to three and a quarter inches will render the use of the forceps or version futile. Between that measurement and a conjugate of two and a half inches, craniotomy is indicated so soon as a fair trial, by an experienced practitioner with an appropriate forceps, has shown that the child cannot be delivered through the natural passages without mutilation. This condition of things I may be permitted to call the *absolute indication* for craniotomy. When carefully performed under these conditions the maternal mortality is not over 5 per cent., and under antiseptic precautions should be no greater than after delivery with forceps.

When the contraction of the pelvis antero-posteriorly is down to two and a half inches or below, the maternal danger from craniotomy is almost or quite as great as from Cesarean section. In cases presenting these higher degrees of contraction, craniotomy is not justifiable even though the child should be dead. It is only in cases near the border-line, where there is a good deal of space laterally, the child dead, and the mother exhausted and suffering from septic absorption, that perforation of the skull and evisceration may be attempted. Here the Cesarean operation is indicated and should be promptly performed.

Whether sins of commission or of omission are of greater gravity I will not venture to decide. For myself, however, I am willing to assume the responsibility of destroying the life of the child to save that of the mother under the conditions I have endeavored to point out. The practitioner who declines to perforate the cranium of a living child, and fears to resort to Cesarean section, may compromise with his conscience by waiting until the child is dead and then deliver by craniotomy. Him I do not envy. The obstetrician who resorts to craniotomy before the child is dead, may be, as I fear it is becoming fashionable to call him, a criminal; but the one who waits for the child to die and then loses both mother and offspring is worse—he is a blunderer!

I may also refer to cases in which the disproportion between the head of the child and the maternal pelvis is not due to contraction

of the latter, but to excessive size of the former. In cases of hydrocephalus, for example, sacrificing the life of the child merely anticipates the ultimate result. Craniotomy is, therefore, indicated in these cases as soon as the diagnosis is made, for it is well known that the maternal mortality is high in labors with hydrocephalic children.

Notwithstanding the increasing sentiment in the profession against craniotomy upon living children, I believe it to be unwise to give up this operation until an efficient alternative is proposed, which gives a better promise of life to the mother than any with which we are at present acquainted.

The operation is one of the simplest in obstetric surgery. After evacuation of the bladder and rectum, the vagina is washed out with an antiseptic douche, and the obstetrician's hands and instruments thoroughly disinfected.

An assistant fixes the head by pressing the child well down into the pelvis from above, and the trephine perforator, guarded and steadied by the left hand in the vagina, is applied to the most projecting bone—usually one of the parietals. With the right hand the tube is withdrawn from the end of the trephine and several complete turns given to the handle of the latter. As soon as the scalp is cut through, the handle may be turned backward and forward as in the ordinary operation of trephining. In a few moments the skull will be perforated and the button of bone removed as the trephine is withdrawn. The brain is then broken up with any convenient instrument—a large steel sound, for example,—and the delivery left to nature, or hastened with Meigs's craniotomy forceps. The cranioclast is a cumbersome and unnecessary instrument. Where it is necessary to break up the skull with the forceps, the left hand should be kept in the vagina to guard the latter against laceration as the bones are removed.

After delivery of the placenta an intra-uterine injection may be given if considered necessary, but the antiseptic vaginal douche should never be omitted.

In destroying the brain, care should be taken to penetrate the medulla, otherwise the obstetrician may be confronted with the horrifying spectacle of a living brainless child which he has first mutilated and then brought into the world. The after-treatment presents nothing peculiar.